

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 52-57 have been canceled. New claims 58-68 have been added. Support for the new claims can be found in canceled claims 1-6 and 52-57. No new matter has been added.

Claim 52 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. 2,389,849 (Gruss). Applicant respectfully traverses this rejection. Claim 52 has been canceled, rendering this rejection moot as to that claim. However, Applicant will address this rejection to the extent Gruss may apply to new claims 58-68. Applicant does not concede the correctness of this rejection as it relates to claim 52.

Claim 52 has been replaced with new claim 68 for the purpose of more clearly reciting the structural features of the invention and to track the limitations of the claims originally filed in the application.

Gruss discloses a lower chamber 37 that is not filled with liquid, as contended in the rejection. Lower chamber 37 is either filled or substantially filled with air (see Figures 3 and 4 and column 2, lines 44-55 of Gruss). The only liquid that can be located within lower chamber 37 is any excess oil withdrawn from chamber 40 via ducting 41 to maintain the oil level 51 within chamber 40. Such oil introduced into lower chamber 37 is, however, subsequently forced past the packing 39 into upper chamber 36 (see column 2, lines 56-60). The oil contained within upper chamber 36 cannot pass back through the packing 39 into the lower chamber 37 (see column 1, lines 12-15). Thus, Gruss fails to disclose a cylinder having a liquid-filled piston chamber as required by claim 58. New claim 58 requires that each of the first and second cylinders includes a liquid-filled piston chamber that is sealed from the atmosphere, and a piston received in each of the piston chambers that is axially displaceable through the piston chamber.

Gruss further discloses a first piston 20 that is mounted within a first cylinder 21. However, the piston 20 is not received within a liquid-filled piston chamber, as required by claim 68. The first piston 20 is received in a chamber defined by the upper chamber 36 and the lower chamber 37. The upper chamber 36 is largely filled with air, with a small quantity of oil 38

being provided purely as an oil seal. As noted above, the lower chamber 37 is either entirely or at least substantially filled with air. Further, the lower chamber 37 is not sealed from the atmosphere, but communicates with the atmosphere via port 55. When pressure within the chamber 37 drops below atmospheric pressure, air is ingested from the atmosphere past the ball check valve 9 and into the lower chamber 37 through the port 55 (see column 2, lines 30-33 of Gruss). Similarly, the upper chamber 36 is not sealed from the atmosphere, but communicates with the atmosphere via valve 93 (see column 2, lines 21-23).

The second piston 23 disclosed by Gruss is mounted within a second cylinder 24. However, the second piston 24 is not received within a liquid filled piston chamber, as required by claim 68. The second piston 23 is received within a chamber defined by chamber 58 and chamber 60. As with chambers 36 and 37, the chamber 60 is largely filled with air, with a small quantity of oil being provided purely as an oil seal, and the chamber 58 is either entirely or at least substantially filled with air. Further, the chamber 58 is not sealed from the atmosphere, but communicates directly with the atmosphere via a breather pipe 59 (see column 2, lines 14-15 of Gruss). The chamber 60, which does include some liquid is also in communication with an air filled chamber 85 (specifically pocket 85A) via a discharge port 53, which feeds air into chamber 60. Therefore, Applicant submits that Gruss fails to disclose every limitation of claim 58 and the claims that depend from it.

In view of the above, Applicant submits that the device disclosed by Gruss has several shortcomings as compared to the Applicant's claimed shock absorber. If the Gruss device were utilized on a motor vehicle traveling over a road, said application would provide high frequencies and low amplitudes inputs and there would be a significant buildup of heat and pressure within the air-filled chambers 36, 37, 58, 60. This would result in a subsequent loss of air from upper chamber 36 through valve 93, resulting in a loss of dampening. If valve 93 (which provides fluid communication between upper chamber 36 and the atmosphere) and breather pipe 59 (which provides fluid communication between chamber 58 and the atmosphere) were sealed, so as to isolate these chambers from the atmosphere, then the Gruss device simply would not function.

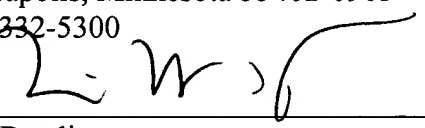
The Gruss device allows for liquid in chamber 60 and upper chamber 36 to be in direct contact with air over a large surface area of the liquid because these chambers are only partially liquid filled. Allowing liquid within the chambers to be in direct contact with air over a large surface area enables aeration of the liquid (that is, small bubbles of air mixing with the liquid). This aeration within the chamber may significantly impact the performance of the shock absorber. The air provided within the chambers of the Gruss device is, however, required in order to compensate for a liquid displaced by the cylinders. If the chambers of the Gruss device were modified to be "liquid filled" as required by claim 58, the Gruss device would not work because the second piston 23 would become static and would provide no shock absorbing capabilities as a result of the chambers being filled with incompressible liquid. Further, if the chambers of Gruss were liquid filled, liquid from the system would be lost to atmosphere via the valve 93 and breather pipe 59. Therefore, modifying the device disclosed by Gruss to include the features required by claims 58-68 would render the Gruss device inoperable. Therefore, Applicant submits that new claims 58-68 are allowable for these additional reasons.

In view of the above, Applicant requests reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any issues related to this matter, please contact Applicant's attorney below at (612) 336-4755.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

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Brian Batzli
Reg. No. 32,960
BHB/JNR:ae